

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Original) A method comprising a step of irradiating carbon nanotubes with microwaves to yield a plurality of crosslinked carbon nanotubes.
2. (Original) The method of claim 1, wherein the step of irradiating is carried out in an inert environment selected from the group consisting of ultra-high vacuum, high vacuum, inert gases, and combinations thereof.
3. (Original) The method of claim 1, wherein the microwave radiation comprises a frequency that ranges from about 0.01 GHz to about 100 GHz.
4. (Previously Presented) The method of claim 3, wherein the frequency ranges from about 1 GHz to about 18 GHz.
5. (Original) The method of claim 1, wherein the microwave radiation is generated by a magnetron with a power that ranges from about 1 W to about 10,000 W.
6. (Original) The method of claim 5, wherein the power ranges from about 10 W to about 1,000 W.
7. (Previously Presented) The method of claim 1, wherein the plurality of crosslinked carbon nanotubes comprises at least one junction formed via a rearrangement of carbon atoms.

8. (Previously Presented) A method comprising a step of irradiating carbon nanotubes with microwaves to yield a plurality of crosslinked carbon nanotubes, wherein crosslinking is generated between the sidewalls of adjacent carbon nanotubes.
9. (Previously Presented) The method of claim 8, wherein the carbon nanotubes are single-wall carbon nanotubes.
10. (Previously Presented) The method of claim 8, wherein the carbon nanotubes are chemically functionalized prior to the step of irradiating.
11. (Previously Presented) The method of claim 8, wherein the crosslinking comprises covalent bonds.
12. (Previously Presented) The method of claim 11, wherein the covalent bonds are carbon-carbon bonds.
13. (Previously Presented) The method of claim 8, wherein the step of irradiating is carried out in an inert environment selected from the group consisting of ultra-high vacuum, high vacuum, inert gases, and combinations thereof.
14. (Previously Presented) The method of claim 8, wherein the microwave radiation comprises a frequency that ranges from about 0.01 GHz to about 100 GHz.
15. (Previously Presented) The method of claim 14, wherein the frequency ranges from about 1 GHz to about 18 GHz.
16. (Previously Presented) The method of claim 8, wherein the microwave radiation is generated by a magnetron with a power that ranges from about 1 W to about 10,000 W.

17. (Previously Presented) The method of claim 16, wherein the power ranges from about 10 W to about 1,000 W.
18. (Previously Presented) The method of claim 8, wherein the plurality of crosslinked carbon nanotubes comprises at least one junction formed via a rearrangement of carbon atoms.
19. (New) A method comprising a step of irradiating single-wall carbon nanotubes with microwaves to yield a plurality of crosslinked single-wall carbon nanotubes, wherein crosslinking is generated between the sidewalls of adjacent single-wall carbon nanotubes, and wherein the step of irradiating is carried out in an inert environment selected from the group consisting of ultra-high vacuum, high vacuum, inert gases, and combinations thereof.
20. (New) The method of claim 19, wherein the single-wall carbon nanotubes are chemically functionalized prior to the step of irradiating.
21. (New) The method of claim 19, wherein the crosslinking comprises covalent bonds.
22. (New) The method of claim 21, wherein the covalent bonds are carbon-carbon bonds.
23. (New) The method of claim 19, wherein the microwave radiation comprises a frequency that ranges from about 0.01 GHz to about 100 GHz.
24. (New) The method of claim 23, wherein the frequency ranges from about 1 GHz to about 18 GHz.

25. (New) The method of claim 19, wherein the microwave radiation is generated by a magnetron with a power that ranges from about 1 W to about 10,000 W.
26. (New) The method of claim 25, wherein the power ranges from about 10 W to about 1,000 W.
27. (New) The method of claim 19, wherein the plurality of crosslinked single-wall carbon nanotubes comprises at least one junction formed via a rearrangement of carbon atoms.